

Abstract of the Invention

A system for monitoring a fabrication process is provided. The system includes one or more light sources, each light source directing light to one or more gratings on a wafer. Light reflected from the gratings is collected by a measuring system that processes the collected light. The collected light is indicative of distortion due to stress at respective portions of the wafer. The measuring system provides distortion/stress related data to a processor that determines the acceptability of the distortion of the respective portions of the wafer. The collected light may be analyzed by scatterometry systems to produce scatterometry signatures associated with distortion and to produce feed-forward control information that can be employed to control semiconductor fabrication processes.